

# WEST

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Oct 3, 2000

DERWENT-ACC-NO: 2000-055363  
 DERWENT-WEEK: 200050  
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TITLE: Enrichment of polyunsaturated fatty acid mixture, useful for production of compositions enriched in specific isomers

INVENTOR: CAIN, F W; TARAN, V ; VAN HOEK, G L M ; VAN DER HOEK, M H W

PATENT-ASSIGNEE:

|                    |      |
|--------------------|------|
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| LODERS-CROKLAAN BV | UNIL |

PRIORITY-DATA: 1998EP-0201580 (May 12, 1998)

PATENT-FAMILY:

| PUB-NO          | PUB-DATE          | LANGUAGE | PAGES | MAIN-IPC   |
|-----------------|-------------------|----------|-------|------------|
| US 6127562 A    | October 3, 2000   | N/A      | 000   | C11B007/00 |
| EP 964058 A1    | December 15, 1999 | E        | 008   | C12P007/64 |
| JP 2000023689 A | January 25, 2000  | N/A      | 004   | C12P007/64 |

DESIGNATED-STATES: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL  
 PT RO SE SI

APPLICATION-DATA:

| PUB-NO        | APPL-DATE      | APPL-NO        | DESCRIPTOR |
|---------------|----------------|----------------|------------|
| US 6127562A   | May 12, 1999   | 1999US-0310339 | N/A        |
| EP 964058A1   | April 27, 1999 | 1999EP-0201289 | N/A        |
| JP2000023689A | May 10, 1999   | 1999JP-0128955 | N/A        |

INT-CL (IPC): C11B 7/00; C12N 9/20; C12P 7/64; C12N 9/20; C12R 1/05

ABSTRACTED-PUB-NO: EP 964058A

BASIC-ABSTRACT:

NOVELTY - A process (I) for the enrichment of a polyunsaturated fatty acid (PUFA) mixture, comprising different isomers with at least two conjugated unsaturations, including isomers from which one unsaturation is a trans-10 double bond, is new.

DETAILED DESCRIPTION - A process (I) for the enrichment of a polyunsaturated fatty acid (PUFA) mixture, comprising different isomers with at least two conjugated unsaturations, including isomers from which one unsaturation is a trans-10 double bond, is new. The PUFA mix (II) is a CLA mixture comprising CLA isomers, at least one having a trans-10 double bond and (II) comprises at least 5% weight of the trans-10 isomer. (I) comprises:

(1) subjecting (II) to an enzymatic conversion with a mono-, di- or higher alcohol, using an enzyme (III) that discriminates trans-10 isomers from other cis and/or trans acting isomers also present in the CLA mixture of (II);

(2) separating the mixture obtained, after the conversion, into unconverted PUFA

acids CLA and esters or glycerides, especially CLA, by physical or chemical means; and

(3) isolating an ester or glyceride mix from CLA's that is enriched in trans-10 CLA isomers with at least 30% compared to the starting mixture.

USE - (I) is used for the enrichment of a polyunsaturated fatty acid (PUFA) mixture (claimed). The method allows the manufacture of compositions enriched in specific desired isomers, including trans-10 isomers. (I) is especially useful when using short alkyl alcohols (C1 - C6), especially ethanol and glycerol, that are food-grade.

ADVANTAGE - Prior art methods for the enrichment of a compound, based on alcoholysis, are not very suitable for obtaining an ester product that is enriched in trans-10 isomers, as the process has to be repeated several times, making it complicated, time-consuming and leads to lower enrichment along the free fatty acid route. (I) provides an enriched ester product in one esterification step and therefore results in higher enrichment.

ABSTRACTED-PUB-NO:

US 6127562A

EQUIVALENT-ABSTRACTS:

NOVELTY - A process (I) for the enrichment of a polyunsaturated fatty acid (PUFA) mixture, comprising different isomers with at least two conjugated unsaturations, including isomers from which one unsaturation is a trans-10 double bond, is new.

DETAILED DESCRIPTION - A process (I) for the enrichment of a polyunsaturated fatty acid (PUFA) mixture, comprising different isomers with at least two conjugated unsaturations, including isomers from which one unsaturation is a trans-10 double bond, is new. The PUFA mix (II) is a CLA mixture comprising CLA isomers, at least one having a trans-10 double bond and (II) comprises at least 5% weight of the trans-10 isomer. (I) comprises:

(1) subjecting (II) to an enzymatic conversion with a mono-, di- or higher alcohol, using an enzyme (III) that discriminates trans-10 isomers from other cis and/or trans acting isomers also present in the CLA mixture of (II);

(2) separating the mixture obtained, after the conversion, into unconverted PUFA acids CLA and esters or glycerides, especially CLA, by physical or chemical means; and

(3) isolating an ester or glyceride mix from CLA's that is enriched in trans-10 CLA isomers with at least 30% compared to the starting mixture.

USE - (I) is used for the enrichment of a polyunsaturated fatty acid (PUFA) mixture (claimed). The method allows the manufacture of compositions enriched in specific desired isomers, including trans-10 isomers. (I) is especially useful when using short alkyl alcohols (C1 - C6), especially ethanol and glycerol, that are food-grade.

ADVANTAGE - Prior art methods for the enrichment of a compound, based on alcoholysis, are not very suitable for obtaining an ester product that is enriched in trans-10 isomers, as the process has to be repeated several

times, making it complicated, time-consuming and leads to lower enrichment along the free fatty acid route. (I) provides an enriched ester product in one esterification step and therefore results in higher enrichment.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: ENRICH POLYUNSATURATED FATTY ACID MIXTURE USEFUL PRODUCE COMPOSITION ENRICH SPECIFIC ISOMER

DERWENT-CLASS: D16 D23 E17

CPI-CODES: D05-A02C; D05-H13; D10-B02; D10-B04; E10-G02B2; E10-G02D;

## CHEMICAL-CODES :

## Chemical Indexing M3 \*01\*

## Fragmentation Code

H7 H721 H722 H723 J0 J011 J012 J013 J014 J2  
J271 J272 J273 L660 L699 M210 M211 M212 M213 M214  
M215 M216 M220 M221 M222 M223 M224 M225 M226 M231  
M232 M233 M262 M272 M281 M282 M311 M312 M313 M314  
M315 M316 M320 M321 M331 M332 M333 M340 M342 M343  
M344 M383 M391 M416 M720 M904 M905 N134 N241 N242  
N262 N341 N342 N512 N513 Q233 Q271

## Markush Compounds

200010-49101-K 200010-49101-P

## Chemical Indexing M3 \*02\*

## Fragmentation Code

H7 H722 H723 J0 J011 J012 J013 J014 J2 J271  
J272 J273 L660 L699 M210 M211 M212 M213 M214 M215  
M216 M220 M221 M222 M223 M224 M225 M226 M231 M232  
M233 M262 M272 M281 M282 M311 M312 M313 M314 M315  
M316 M320 M321 M331 M332 M333 M340 M342 M343 M344  
M383 M391 M416 M720 M904 M905 N134 N241 N242 N262  
N341 N342 N512 N513 Q233 Q271

## Markush Compounds

200010-49102-K 200010-49102-P

## Chemical Indexing M3 \*03\*

## Fragmentation Code

H4 H401 H481 H8 M210 M212 M272 M281 M320 M416  
M620 M730 M904 M905 M910

## Specific Compounds

00245K 00245S

## Registry Numbers

0245S 0245U

## Chemical Indexing M3 \*04\*

## Fragmentation Code

H4 H403 H483 H8 M280 M313 M321 M332 M343 M383  
M391 M416 M620 M730 M904 M905 M910

## Specific Compounds

00113K 00113S

## Registry Numbers

0113S 0113U

UNLINKED-DERWENT-REGISTRY-NUMBERS: 0113S; 0113U ; 0245S ; 0245U

## SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2000-014650